

ABSTRACT

A method for spray deposition of small targets, such as medical devices like stents. The method includes the steps of positioning a spray nozzle body, which has a fine bore diameter to pressurize the coating material within the nozzle body, near a medical device, and dampening vibration of the nozzle body during operation by maintaining a steady back pressure in the coating material line sufficient to eliminate or minimize vibration modes from external and internal sources; and stabilizing the spray coating plume. In another embodiment, a coating method is disclosed in which a finer atomized spray droplet size is achieved by pre-filming the coating material onto a flat face before entraining the coating material within the atomizing fluid, which improves manufacturing repeatability, reduces coating variances, and increases therapeutic dosage predictability. In certain embodiments of the invention, the coating materials include therapeutic agents and biologically active materials.